UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/810,566	03/29/2004	Sasha Paley	246/236	1230

7590 04/14/2006	**EXAMINER**
DR. MARK FRIEDMAN LTD. C/o Bill Polkinghorn Discovery Dispatch 9003 Florin Way Upper Marlboro, MD 20772	SCHNEIDER, JOSHUA D

ART UNIT	PAPER NUMBER
2182	

DATE MAILED: 04/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

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	Application No.	Applicant(s)
Office Action Summary	10/810,566	PALEY ET AL.
	Examiner	Art Unit	
	Joshua D. Schneider	2182	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>06 January 2006</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-4,6-15,20,21,24,27,28,31,32,35-38 and 45-48</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-4,6-15,20,21,24,27,28,31,32,35-38 and 45-48</u> is/are rejected.

7)☒ Claim(s) <u>20,21,24,27,28,31,32,35-38 and 45-48</u> is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Fritz M. Fleming
Supervisory **FRITZ FLEMING**
~~PRIMARY EXAMINER~~
GROUP 2100
AU 2181
4/11/2006

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

U.S. Patent and Trademark Office
PTOL-326 (Rev. 7-05)   Office Action Summary   Part of Paper No./Mail Date 20060329

DETAILED ACTION

Response to Arguments

1.   Applicant's arguments filed 1/6/2006 have been fully considered but they are not

persuasive. Applicant's arguments will be addressed in serial.

2.   Applicant first argues that the term LUN is enabled because it is well known in the art.

However, this does not address the problem that the term is unclear. Different uses of the

acronym LUN have been found in the art, such as logical unit, logical disk unit, and logical unit

number. These terms are generally further defined and may relate to a volume, a masking

number, or even an abbreviation for lung or lunch. The interpretations as a storage space may be

as a part of a single drive or a collection of parts of numerous drives. The essential goal of the

description of the invention requirement is to clearly convey the information that an applicant

has invented the subject matter which is claimed. The reliance on information outside of the

scope of the specification does not clearly convey what is being claimed. While it is accepted

that the applicant most likely means a logical unit number, it is not clear why specification does

not eliminate the problem and include such language. The rejection of this term is withdrawn in

view of the presented information and appropriate limitations to the interpretation of the term

will henceforth be imposed as the record has been clarified.

3.   Applicant's arguments to the term virtual device have not been so clarifying. Applicant

has presented several definitions that have not addressed the concerns laid out in the previous

rejections. The problem with the term virtual being used is that it appears that in at least some

circumstances that the nothing is virtual about the device. If there are two separate physical

devices, what is being shown essence or effect without actually being physical? This question is further explained below in the more fully explained rejection.

4.   Applicant next argues that the second set of instructions can be alternately sent through the first or second virtual device. The amendment to claim 2 and corresponding argument is persuasive.

5.   Applicant next argues that the term native command and the corresponding non-native command are well known in the art. This argument persuasively establishes that the term is enabled and clear in its use, but must then, in view of this argument, be obvious to combine with the other art of record in order to improve interchangeability.

6.   The term reversibly operationally connected is argued next. Applicant cites a section of the specification as implicitly teaching the meaning of this term. This section discusses the use of a switch, but does not disclose how it can be reversibly operationally connected. A two point switch, by definition, must have a connected and unconnected state, but this does not explain what the modifiers reversibly and operationally alter about the standard operation. This argument is not persuasive.

Specification

7.   The disclosure is objected to because of the following informalities: the term virtual device is used without explaining any virtual characteristics that define the device.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

8.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9.   Claims 1-4, 6-15, 20, 21, 24, 27, 28, 31, 32, 35-38, and 45-48 are rejected under 35

U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and

distinctly claim the subject matter which applicant regards as the invention.

10.   With regards to claims 1-4, 6-15, 20, 21, 24, 27, 28, 31, 32, 35-38, and 45-48, the term

virtual is used in a way that may be inconsistent with its standard definition, but is not defined in

the specification. By definition virtual means "being such in essence or effect though not

formally recognized or admitted," as defined by Merriam-Webster's Online Dictionary. In these

claims, applicant has claimed that the first and second "virtual" devices can in fact be separate

devices. If they are in fact first and second separate devices, there is nothing virtual about them.

As such the term "virtual" must have some different meaning that has not been found in the

specification. The independent claims then all fail to distinctly claim the subject matter that the

applicant regards as the invention. The fact that the two virtual devices are claimed to be two

separate devices in some claims, and in a single physical device in other claims also leads to

divergent search matter that attempting to claim more than on invention.

11.   The problem here is highlighted by the two embodiments now presented in the

independent claims. In the first, the virtual devices are in a common device, while in the second,

the two virtual devices are in separate physical devices. Applicant has made it clear that it was

well known in the art that a virtual device might be represented to the operating system without

an actual physical device. It is unclear how this relates to the claimed subject matter. In the

claims, there is always a physical device, and in some situations two separate physical devices.

If there is a physical device, is not clear what is virtual about the representation when there is a

real, actual physical device. The necessity of having at least to different interpretations of the

term virtual makes it unclear what should be the scope of this term for interpretation purposes.

12. The dependent claims are rejected for incorporating the same indefinite subject matter.

13. With regards to claim 1, the term reversibly operationally connecting is not defined by

the specification.

14. All further rejections and objections are made in view of the specification as best

understood in light of the previous rejections and objection.

Claim Rejections - 35 USC § 102

15. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

16. Claims 1-4, 6, and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S.

Patent 6,502,146 to Rasmussen et al.

17. With regards to claim 1, Rasmussen teaches a microcontroller for executing commands

received from the host computer (Fig. 2, elements 250 and 260, column 4, line 25, through

column 5, line 25, sequencer logic, port and associated device); a first virtual device for passing

to said microcontroller a first set of said commands received from any user of the host computer

(Fig. 2, elements 230 and 235, column 4, line 25-57); and a second virtual device for passing to

said microcontroller a second set of said commands received from any user of the host computer

(Fig. 2, elements 210 and 215, column 4, line 25-57). Rasmussen does not explicitly teach the

use of an interface for effecting an operational connection of the peripheral device to the host

computer to receive said commands wherein said first virtual device and said second virtual

device are implemented in separate first and second physical devices: and wherein the peripheral

device further comprises a switch for connecting said second physical device to said interface.

However, it is inherent to that the USB interface taught by Rasmussen that the interface forms an

operational connection that can receive commands from one or more devices (column 1, lines

14-55). The connections are inherently switched between connected and non-connected states,

as USB is a time-multiplexed bus system, and a multiplexed system is by definition switched.

18.   With regards to claim 2, Rasmussen teaches said first virtual device is operative to pass to

said microcontroller said second set of said commands received from only a privileged user of

the host computer (Fig. 2, elements 230 and 235, column 4, line 25-57).

19.   With regards to claim 3, Rasmussen teaches said second virtual device is operative to

pass to said microcontroller any said command received from any user of the host computer (Fig.

2, elements 210 and 215, column 4, line 25-57).

20.   With regards to claim 4, Rasmussen teaches said microcontroller is operative to receive

from said second virtual device any said command formatted as a native command of said

second virtual device and to re-interpret said native command as said any command (Fig. 2,

elements 205, 210, and 215, column 4, line 25-57, re-interpretation of host commands inherent to

device drivers).

21.   With regards to claim 6, Rasmussen teaches said virtual devices are sub-interfaces of said

interface (Fig. 2, elements 210, 215, 230, and 235, column 4, line 25-57).

22.   With regards to claim 7, Rasmussen teaches said interface is a USB interface (column 4,

line 44-54).

Claim Rejections - 35 USC § 103

23. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

24. Claims 1-4 and 6-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Applicants Admitted Prior Art (AAPA).

25. With regards to claim 1, AAPA teaches a microcontroller for executing commands

received from the host computer (Fig. 1, element 123); a first virtual device for passing to said

microcontroller a first set of said commands received from any user of the host computer (Fig. 2,

elements 124 and 131); and a second virtual device for passing to said microcontroller a second

set of said commands received from any user of the host computer (second copy of Fig. 2,

elements 124 and 131, where there are two physical devices, as per claim 16). The AAPA does

not explicitly teach the use of an interface for effecting an operational connection of the

peripheral device to the host computer to receive said commands wherein said first virtual device

and said second virtual device are implemented in separate first and second physical devices, and

wherein the peripheral device further comprises a switch for connecting said second physical

device to said interface. However, it is inherent to the USB interface taught by the AAPA that

the interface forms an operational connection that can receive commands from one or more

devices. The connections are inherently switched between connected and non-connected states,

as USB is a time-multiplexed bus system, and a multiplexed system is by definition switched.

The use of multiple USB devices is notoriously well known to be part of the USB specification.

The representation of two separate physical devices to a USB hub would represent two virtual devices to the host device. It would have been obvious to one of ordinary skill in the art at the time of invention to combine the USB keychain devices of the AAPA with the use of two USB devices as taught by the USB specifications in order to in order to take advantage of the robust plug and play features of the USB specifications.

26.   With regards to claim 2, AAPA teaches said first virtual device is operative to pass to said microcontroller said second set of said commands received from only a privileged user of the host computer (Fig. 2, element 133).

27.   With regards to claim 3, AAPA teaches said second virtual device is operative to pass to said microcontroller any said command received from any user of the host computer (Fig. 2, element 132).

28.   With regards to claim 4, AAPA teaches said microcontroller is operative to receive from said second virtual device any said command formatted as a native command of said second virtual device and to re-interpret said native command as said any command (page 10, line 14, through page 12, line 17, re-interpretation of host commands inherent to device drivers).

29.   With regards to claim 6, AAPA teaches said virtual devices are sub-interfaces of said interface (Fig. 2, elements 132, 133, and 134, page 10, line 14, through page 12, line 17).

30.   With regards to claim 7, AAPA teaches said interface is a USB interface (Fig 1, element 124).

31.   With regards to claim 8, AAPA teaches said first virtual device is a USB mass storage interface (Fig. 1, element 124).

32.   With regards to claim 9, AAPA inherently teaches said interface effects a simultaneous

operational connection of both said virtual devices to the host computer to receive said

commands, as the USB specifications require that multiple devices can be connected at the same

time.

33.   With regards to claim 10, AAPA inherently teaches said interface is a USB interface, and

wherein said first and second virtual devices are operative to be enumerated together by the host

computer, thereby becoming simultaneously operationally connected to the host computer as

both devices would be enumerated together is connected to the host computer at startup of the

USB or upon resetting.

34.   With regards to claim 11, AAPA inherently teaches said interface effects an alternate

operational connection of said two virtual devices to the host computer to receive said

commands, as USB is a time-multiplexed bus, and two devices connected to it would alternately

send and receive data.

35.   With regards to claim 12, AAPA inherently teaches said interface is a USB interface, and

wherein said first and second virtual devices are operative to be enumerated alternately by the

host computer, thereby becoming alternately operationally connected to the host computer, as the

devices could be alternately physically connected and disconnected to the USB.

36.   With regards to claim 13, AAPA teaches a third virtual device that supports auto-run

when said operational connection of the peripheral device to the host computer is initiated (third

copy of Fig. 2, elements 124, 131, and 134, where there are three physical devices).

37.   With regards to claim 14, AAPA teaches said virtual devices are sub-interfaces of said

interface (Fig. 2, elements 132, 133, and 134, page 10, line 14, through page 12, line 17).

Claim Rejections - 35 USC § 103

38.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

39.   Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Applicants

Admitted Prior Art (AAPA) in further view of U.S. Patent 6,813,725 to Hanes et al.

40.   With regards to claims 15, AAPA does not explicitly teach one of the virtual devices is a

USB CD sub-interface of said interface. Hanes teaches that USB CD sub-interfaces were well

known in the art at the time of invention (column 2, line 38-52). It would have been obvious to

connect the USB sub-interfaces of Hanes with the USB of the AAPA in order to provide a large

amount of storage space for application such as disaster recovery.

41.   Claims 20, 21, 24, 27, 28, 31, 32, 35-38, 45-48 would be allowable if rewritten or

amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this

Office action.

Conclusion

42.   Applicant's amendment necessitated the new ground(s) of rejection presented in this

Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this

final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Joshua D. Schneider whose telephone number is (571) 272-4158.

The examiner can normally be reached on M-F, 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Kim Huynh can be reached on (571) 272-4147. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JDS

FRITZ FLEMING
PRIMARY EXAMINER
GROUP 2100
4/13/2006